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Our PUBLIC LANDS

BUREAU OF LAND MANAGEMENT

From 1812

To 1957

OCTOBER 1957 • Volume 7, Number 2

OUR PUBLIC LANDS . . .

500 million acres of land that belong to us and to our neighbors and to all the people of the United States . . . public lands that are rich in natural resources . . . timber, rangeland, water, minerals, and land for every use . . . "active acres" that must be carefully and wisely managed for the welfare of the Nation . . .

As a forum for the exchange of ideas and information on th development, utilization, and conservation of the resources on public lands, this periodical contains no copyrighted material. If pictures or material are reprinted, a credit line should be given Our Public Lands *and the Bureau of Land Management.*

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COVER

When the General Land Office was established in 1812 one of its principal responsibilities was the maintenance of the records dealing with the public domain. Since 1946, when the General Land Office and the then 12-year-old Grazing Service were merged, the public land records have been maintained by the Bureau of Land Management. The cover depicts a new BLM program to revise and modernize the public land records system. Cover and art work by Theodore H. Drummond, BLM Record Management Staff. Diagram of public land survey system by Abraham P. Yon Cartographic Draftsman, Cadastral Engineering Staff, BLM.

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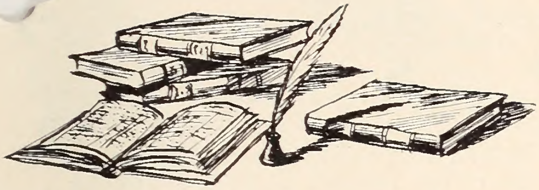


RECORDS—FOOTNOTES TO HISTORY

This issue of *Our Public Lands* is devoted largely to a special and very important kind of records—the public land records.

As a topic for dinner conversation, most people would find the subject of records (those made of paper with writing on them!) rather boring. Except for records of notable historical significance (and, sometimes, only then because of an autograph on them), many people give very little thought to the general subject of records.

But we are a Nation that depends to a great extent on the records of the past and upon the records currently being created. This is true not only of government, but also of private businesses.

From birth certificate to death certificate, life insurance policies and automobile titles; licenses, drug prescriptions, letters and correspondence, bank checks, deeds, mortgages, and a thousand more. Records, reports, lists and documents. tatistics, serial numbers, and registers. Papers, les, binders, ledgers, and microfilm. Orders, invoices and bills of lading. All a part of the gigantic volume of paperwork created by 170 million Americans living, working, playing, and growing.

Few people are conscious of the importance which records assume in their daily lives. They are taken largely for granted.

Records that someone maintains and keeps up-to-date, for example, make it possible for us to receive magazines and publications every month to which we subscribe. Someone's records determine the milkman's route, the laundry pick-up, and the policeman's beat. And those monthly bills that keep coming in—they're the result of someone's records of sales and deliveries and payments.

What are the public land records? Why are they important? What are they used for?

The answers to these and many other questions about what is one of the fundamental tools of land conservation and management may be found in these pages.

As an important and every-day working tool of the Bureau of Land Management, the public land records have recently been the subject of much study and activity by many people, as the result of a monumental undertaking to revamp and modernize the entire records system.

The records themselves (and many of the methods by which those records were kept) are more than a century and a half old. They are the legal basis of title to hundreds of millions of acres of privately owned lands.

Much of the early history of the exploration, settlement, and development of the western United States is recorded on their pages. Located on the pages of over six thousand bound volumes called *tract books*, containing over a million and a half pages, is the present status and past history of over a billion and a half acres of public and private lands. This includes over 75 percent of the total land area of the continental United States plus the Territory of Alaska.

Supporting the tract books, and documenting the work of the public land surveyors and land examiners are nearly nine thousand volumes of *field notes* and 200,000 *plats of survey* (maps).

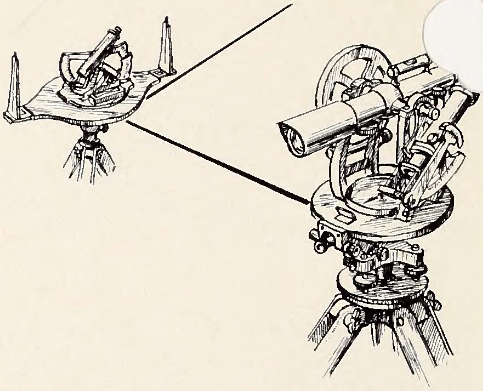
And in addition to all this, there are over 11,500 volumes of land *patents* (title documents), representing the source of legal title on over six and a half million separate ownerships, embracing over a billion acres of land. (A billion acres is about one-half the total land area of the United States!)

The importance of the public land records, however, cannot be expressed in terms of their volume or size. Their real importance lies in the functions which they perform and the uses to which they are put. In these terms, the public land records are one of America's most necessary and valuable set of documents. They are the foundation of most real property ownership in the United States. Land ownerships change. Land uses and characteristics change. But the land itself does not. The public land records document and preserve the changes made on the land, providing illuminating footnotes to the history of the conservation and development of the public lands and their resources.

As a basic tool of public land management and conservation, these records are used by a wide variety of people—from a miner to a homesteader and from a government technician to a school teacher interested in land for a summer cottage. As the Nation grows in population and economic wealth, even greater demands will be made upon the public lands and the resources which they harbor. In this development, the public land records will continue to play an increasingly important role.

End

THE FOUNDATION OF LAND RECORDS



by CLARK L. GUMM, *Cadastral Engineer, BLM*

THE Bureau of Land Management is now engaged in a project to renew the active records of the greatest and most extensive land operation in history. These records are the legal basis of title and ownership to the fundamental resource of the United States—the land.

On the pages of these records will be found the origin and legal basis upon which rests the title to 6½ million original individual land ownerships, constituting over one billion acres of the original public domain that are now in private ownership. This is the part of the public domain the National Government has sold, made available to veterans, or transferred to private ownership under the homestead and other public land laws during its 170 years of existence. It is unlikely that any collection of land records elsewhere in the world can equal the number, area, and present value of the real estate transactions based on these documents.

The Thirteen Colonies and the States of Kentucky, Maine, Vermont, West Virginia, Tennessee, and Texas were never part of the national public domain and their public lands and records have remained with them.

The public domain including Alaska has at its greatest extent aggregated 2.8 million square miles or approximately a third of the Continent. Of this vast area about 775 million acres remain in Federal ownership and on it active day-by-day records are maintained.

Over the years these records in many cases have become dog-eared and nearly illegible through decades of constant use. Also, the innumerable entries made throughout the years, which reflect the increasing interest in our public lands, have caused the records to become difficult and burdensome for the public to unravel. This situation is responsible for the renovation of the land records now underway.

The basic public land records are: the *survey plat* which represents the field survey; *the tract books and serial registers* in which the land status and transactions are recorded and the *patent record* which is the legal evidence of the transfer of title.

The rectangular cadastral survey of the public lands of the United States was authorized by an Ordinance of the Continental Congress on May 20, 1785. This survey scheme as perfected in succeeding years was not an adaptation of an earlier system used in the Colonies, Europe, or elsewhere. From the earliest Colonial days, however, a trend had developed toward regularity in the layout of cities and commons. This influence was also shown in legislative enactments of some Colonies and the survey instructions for settlement lands of the large proprietors.

Unfortunately, these directives were ignored in practice except in New England where the "plantations" or townships tended with time to become more regular and uniform in size. These indefinite beginnings did, no doubt, influence th proponents of a systematic national survey sy tem when the means of settling the Northwestern Territories, (the present day states north of the Ohio River) came before the newly established Congress. Probably more in the minds of many delegates, however, was the bursting court dockets resulting from litigation over boundaries and land disputes due to the unsatisfactory survey systems then in use.

The arguments for and against a national systematic plan of land surveys were hotly debated and many communications bearing on this matter were exchanged between leaders of the new country. Some of the Colonies believed that the existing system of "pitches," whereby a man selected his own land in any shape, would be adequate. This was the random method and pattern of settlement which was universally practiced at that time.

Originally, and for many years, it was contemplated that the public lands would be sold as the main source of revenue for the country and the disposals would be in large parcels which would require little survey. George Washington indicated he opposed detailed land surveys in the belief that people would be interested only in large lands areas, when he wrote:

> "The lands are of so versatile a nature that to the end of time, they will not, by those who are acquainted therewith, be purchased either in township or by square miles

Time has shown the wisdom of those who ad vocated the new survey system. Its superiority and success has been indirectly demonstrated by the fact that no other survey plan has been seriously suggested to supersede it.

When the Founding Fathers approved the Ordinance of May 20, 1785, they were venturing into untried and unknown territory. Until this time there had been no effort to establish a nationally coordinated cadastral survey in any country.

The Ordinance also established another "first"—a national policy of "survey before settlement." This was also a land practice that generally had died out with the Romans. In keeping with this policy the rectangular public land surveys were extended to the public domain before general settlement. Consequently this was the first step in the land settlement program.

The surveyor's *field notes* of his survey became the first written land records. From the field notes the *survey plat* is prepared and as the map or graphic summation of the field and office work becomes the *foundation land record* by which public lands are identified, described, and their areas given. No action or record on any piece of surveyed public land can be made without reference to the plat of survey.

Thus with every surge of our drive to the frontier, the settler generally found the Government surveyer had been there before him and had neatly blocked out the agricultural land into squares with the boundaries marked on the ground. The system of marking the corners and describing each tract was so simple that any one had little trouble locating or describing his particular land. The settler need not be troubled with the worry that his claim conflicted with another, as his boundaries were shown on the official plat and were common boundaries with his neighbors. He knew the exact amount of land he had purchased or settled since it was clearly shown by the survey plat.

If the early settler had received a grant it was equally important to him to know he was receiving the same amount as his fellows. Nor was he concerned that someone else might have a prior claim to his selection since the Government in authorizing him to settle had certified, by using other land records, that the land was open. When *patent*—the final Federal land record—was issued, he was assured that the title which was based on a mathematical and systematic survey plan, was incontestable as to location.

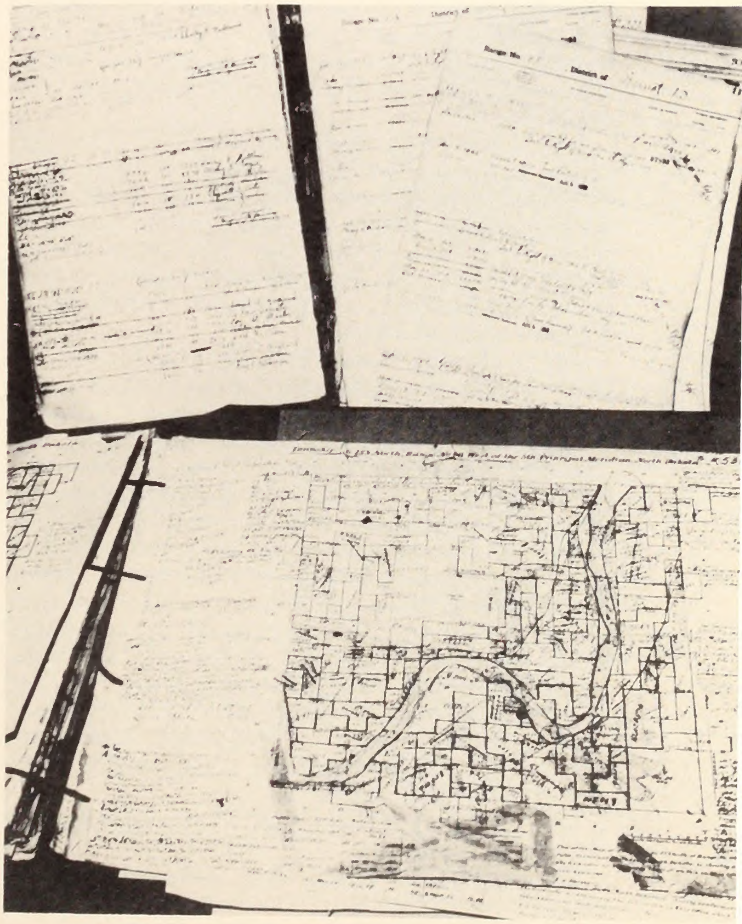
Under the rectangular survey system all section lines are run on the ground with surveying instruments and measuring tapes. Monuments, of the most durable material available, are established every half mile on the surveyed lines and are marked to show their location in the township.

The primary unit of the public land survey system is the *township*. A township is a square, six miles on each side, or a total area of 36 square miles. Townships are laid out like the squares

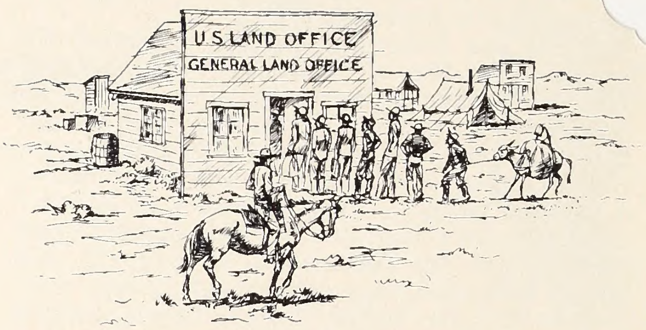
(Continued on page 12)

PUBLIC ROOM. Here in a modern-day Land Office the public land records are an everyday tool.

STATUS RECORDS. Constant use and time has left many of the records in bad condition. The new records will replace these.



FROM OLD RECORDS TO NEW



by EARL J. THOMAS, *Associate Director, BLM*

RECORDS are essential to the performance of the many and varied functions and operations of the Bureau of Land Management and to the fulfillment of its basic objective. They are necessary to protect the rights of individuals and the Government and to carry out the Government's accountability to the people. Federal land records are basic to the effective and efficient management of the Federally-owned lands and resources and to the whole real property structure of the public land states.

Adequate land records are a valuable tool of management. No program of land and resource management can progress satisfactorily without records which accurately document the status, ownership, and use of the public lands and their resources.

There are many different kinds of laws that apply to the public lands. Some of those laws, such as the homestead laws, and the desert land laws provide a means for the transfer of public lands to private citizens for farms and homes. Other laws provide for the public sale of certain lands to individuals. Another law authorizes the disposal of small tracts.

There are also laws which provide for the disposal of mineral lands upon which mining claims have been located under the General Mining Laws. And another law authorizes States and local governments and nonprofit organizations to obtain lands for recreational and other public purposes. There are also laws authorizing the withdrawal of certain lands from all forms of public entry and appropriation—for defense purposes, for wildlife areas and for other management uses. Other laws permit the leasing of certain public lands for the development of oil, gas, and other mineral deposits. All of these laws are a part of the National land policy of the United States.

In the administration of the public domain the Bureau of Land Management is required to maintain a record of:

(1) All lands which are or have been a part of the public domain;

(2) All lands which have been patented or otherwise conveyed to private ownership;

(3) All rights and resources reserved to or retained by the Government in conveyed lands;

(4) All vacant public lands which are withdrawn or reserved for special uses;

(5) Each application for title to or use of public lands or resources including later actions taken on each application; and

(6) A record of lands restored to the public domain.

The present land records are of four different types. They are:

(1) *Identification records*—field notes and plats of survey, which identify and describe the public lands;

(2) *Status records* consisting of *tract books* and *status plats* which record the ownership and use status of public lands and resources;

(3) *Control records* such as patents, approve lists, acts of Congress, Proclamations, and order which provide the legal and administrative basis of rights in or title to public lands and resources; and

(4) *Case records* which document each separate action affecting the public lands or resources.

The use of the basic land records is not restricted to the officials and employees of Bureau of Land Management. The Federal land records are public records and are available for reference or examination by anyone who has a genuine interest in them.

The maintenance of the basic land records is the function and responsibility of the Bureau of Land Management. As the management of Federally owned lands and resources has increased in scope and intensity, the volume, variety and complexity of land records has increased, and has posed unusual problems in records maintenance and management.

One of the greatest sources of difficulty in the use of the status records, and a major deterrent to the expeditious determination of accurate and complete status, is the poor physical and documentary condition of the basic records.

Several detailed studies and investigations of the records system conducted during recent years have led to the development of a completely new and more effective records system. The new system employs the latest techniques of records man agement, including machine reproduction and tabulating card equipment.

The basic components of the revised records sys-m are:

(1) *The control document index:* consisting of microfilm images of patents and other control documents mounted in apertures cut into machine tabulating cards. The cards are key-punched with information which permits them to be sorted and arranged by land description down to township units, so that the main task of revising the status records can begin;

(2) *The master title records:* consisting of a composite plat on reproducible material for each township. It will show all lands, minerals, and other rights owned by the Federal Government and all lands and rights which have been transferred out of Federal ownership. It will also include a historical index sheet on the same kind of reproducible material for each township that will index all essential actions which affect public lands and their resources.

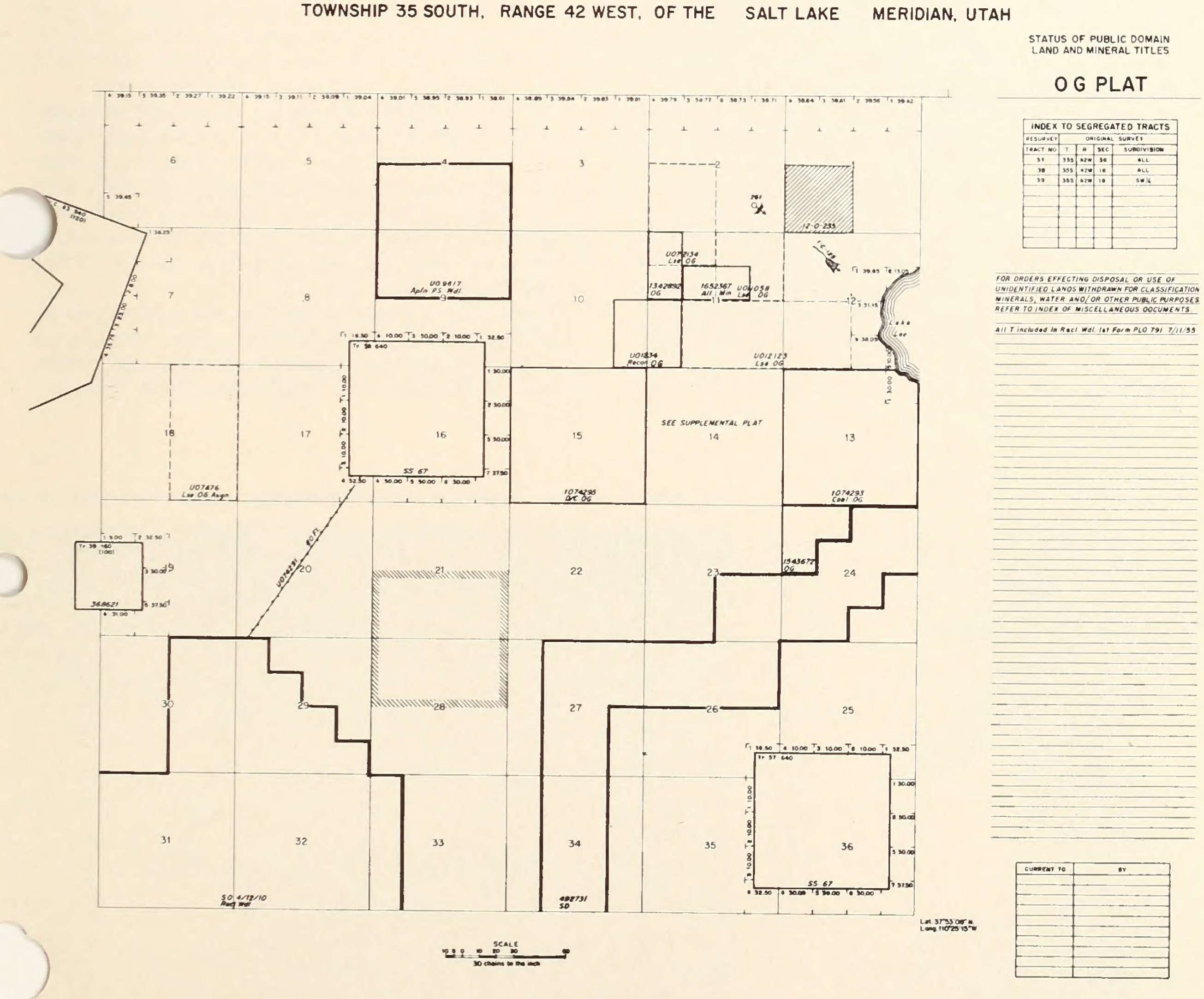
(3) *The working copies of use and title records.* These consist of copies of the master title plat (one copy for ownership and one or more copies for use purpose) and a copy of the tract index sheet for day-to-day operations.

Congress appropriated funds for the initial preparation of the Control Document Index. This project was begun July 1, 1955. The patents and all other control documents were indexed by legal land description. This indexed information is being used as the source of basic data for preparing the second and third group of records.

The completed Control Document Index consists of more than four million cards. They will be filed in the Land Offices with the new master title records and the working copies of use and title records as a reference file.

(Continued on page 15)

USE PLAT. Survey data, ownership, and land use actions show the current land status day by day. (Actual size: 20" x 25½"). (See the Historical Index on page 12).


TOWNSHIP 35 SOUTH, RANGE 42 WEST, OF THE SALT LAKE MERIDIAN, UTAH
STATUS OF PUBLIC DOMAIN LAND AND MINERAL TITLES
O G PLAT
INDEX TO SEGREGATED TRACTS
RESURVEY
ORIGINAL SURVEY
TRACT NO
T
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37 35S 42W 36 ALL
38 35S 42W 16 ALL
39 35S 42W 18 SW¼
FOR ORDERS EFFECTING DISPOSAL OR USE OF UNIDENTIFIED LANDS WITHDRAWN FOR CLASSIFICATION MINERALS, WATER AND/OR OTHER PUBLIC PURPOSES REFER TO INDEX OF MISCELLANEOUS DOCUMENTS
All T included in Recl Wdl 1st Form PLO 791 7/11/55
SEE SUPPLEMENTAL PLAT
U0 9617 Aplo PS Wdl
U07476 Lse OG Asgn
U0 7134 Lse OG
1342892 OG
1652367 All Min
U0 4058 Lse OG
U01834 Reco OG
U012123 Lse OG
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ANTARCTIC ADVENTURE

Have you ever wondered how towns and rivers and creeks get their names?

This is the story of how a mountain in Antarctica called Mt. Berlin came to be named after the man who had accurately determined its geographic location.

It began when a young public land surveyor by the name of Leonard M. Berlin was designated to accompany the late Admiral Richard E. Byrd on the U. S. Antarctic Expedition of 1939–1941. Having served as a surveyor in Alaska, Berlin was well suited to the rigors of arctic travel and survival.

Operating from the expedition's permanent base at Little America, Berlin was one of a three-man exploration and survey party that made long trips across the snow and ice of Antarctica. The other members of the team were Richard Moulton and Jack Bursey. Their job was to gather scientific information and geographical data.

While they were away from the base at Little America the team traveled entirely by skis and dogsled. When camped, the men lived in small tents as protection from the subfreezing temperatures. Their only heat consisted of a half pint of kerosene which they burned each morning and evening to melt snow and dissolve frozen pemmican to eat. Since the survey party was usually away from Little America for about three months at a time, they had to carry all of their equipment and supplies for men and dogs on the sleds. In order to haul the large amounts of supplies needed, each sled had a "trailer" attached which was abandoned when its load was consumed.

Travel through the frozen wastes of Antarctica, where there were no maps, trails, roads, or signboards, was done with the aid of a ship's compass that was mounted atop one of the sleds. Courses were held by "navigating" like a ship at sea. Distances were measured by means of a bicycle wheel hooked on to the rear of the sled which turned a meter calibrated in nautical miles.

On one of their exploration trips, and at a distance of over 500 miles from the base at Little America, the team came upon a mountain that was to serve as a triangulation point to tie in with aerial mapping operations. High on a windswe point on the mountain, Berlin erected a stone cai to mark the location and placed an American flag on top to mark the event.

Then, after carefully making the necessary calculations, Berlin established the mountain's elevation—10,400 feet above sea level—and determined its latitude and longitude. This informa-

LEONARD BERLIN. Transporting transit to next survey station.

SLED DOGS AND SKIS. Navigating with a ship's compass mounted atop sled, survey par

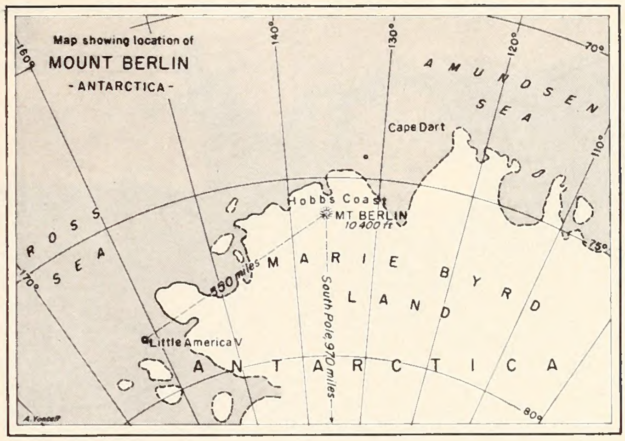
tion was then permanently recorded on a brass monument set alongside the cairn. It was the same kind of marker used by the Bureau of Land Management to mark the public land survey boundaries in the United States and Alaska. From then on, the exact location of the mountain was known and it could serve as a landmark for future exploration and mapping work.

As the result of Berlin's exploration and survey work in Antarctica, a recommendation was made to name the mountain after him. Subsequently, the proposal to call the mountain "Mt. Berlin" was submitted to the Board on Geographic Names for approval. The Board on Geographic Names is an inter-agency organization which, with the Office of Geography in the Department of the Interior has the duty of standardizing geographic names in the United States and throughout the world for use on maps and official publications.

The proposal to name the mountain Mt. Berlin was approved and a recent map published by the National Geographic Society shows the mountain with its new name. **End**

* * *

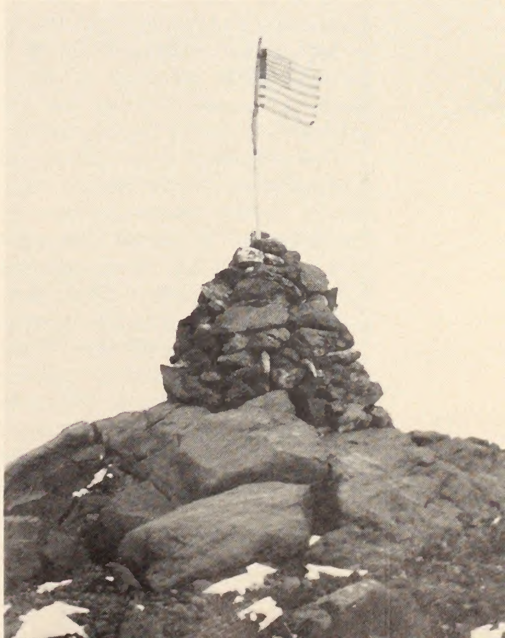
Today Leonard M. Berlin is Chief Cadastral Engineer in Area 1 for the Bureau of Land Management. He is headquartered in Portland, Oregon. While Berlin was serving with the Navy in World War II, he was awarded a medal for his services with the U. S. Antarctic Expedition of 1939–41. The medal is inscribed: "By Act of Congress of the United States to Leonard M. Berlin in recognition of invaluable service to the Nation by courageous pioneering in polar exploration which resulted in important geographical and scientific discoveries." **End**



ANTARCTIC CAMP. Temporary camp offers warmth and shelter to men and dogs.

sses Antarctic mountain in vicinity of Mt. Berlin.

SUMMIT. Rock cairn and brass monument mark location of Mt. Berlin.



active acres

ELEMENTARY ENGINEERING

Elementary Soil and Water Engineering by Schwab, Frevert, Barnes, and Edminister (New York: John Wiley), 296 pp. is a simplified version of the textbook published last year by the same authors which was intended for agriculture engineering students and as a handbook for professional engineers. The new book is intended primarily for textbook use by college students in agriculture and related fields but not specializing in a particular engineering field.

In addition to fundamentals of soil and water conservation engineering the context includes chapters on rainfall and runoff, soil erosion, gully control, drainage, and several major conservation practices.

The book is quite readable since it has been prepared for the reader with no previous training in engineering. This publication has been well illustrated.

MIDDLE EAST REPORT

A current analysis of natural pasture development in Israel is contained in 10 background reports for the fifth meeting of the Working Party on Mediterranean Pasture and Fodder development held in Tel Aviv, Israel, in May 1957.

The meeting was sponsored by the Food and Agriculture Organization of the United Nations. David Schley, who spent considerable time with the Bureau of Land Management in 1955, was Chairman of the Arrangements Committee. Mr. Schley and Yaaqov Orev, who also was with the Bureau, participated in preparing the reports.

Report 1 describes the "Survey of Natural Pastures in Israel" which was carried out with the technical assistance of John Killough, BLM District Range Manager, District Grazing Office M–1, Malta, Monta. In an introductory report Mr. Schley refers to the Karhe Deshe demonstration area as one example of a properly planned pasture showing the economic advantages of a natural pasture conservation program.

Bartholomew Mc Menomey, also of the Malta District Grazing Office, who returned to the States in July following a technical assistance assignment with the U. S. Operations Missions in Israel and Ethiopia, worked on the Karhe Deshe ranch. Mr. Mc Menomey concentrated on the practical aspects of range management and the handling of beef cattle. He was impressed by the ability of the Israeli to quickly adapt improved ran management and livestock methods. Range fir were one of the main problems in Israel. In Ethiopia the land ownership situation, development of livestock water, and predator control were among the problems which have a retarding effect upon improvements in range management.

TWENTY YEARS OF PROGRESS

On August 28, 1937 a new law was signed in which the Congress provided for the permanent management of the forest resources on the Revested Oregon and California Railroad and Coos Bay Wagon Road grant lands of western Oregon on a sustained yield basis. Through this action a program was initiated to place nearly 2½ millian acres of timber lands under management practices which would assure a continuous harvest of the forest resources with the maximum benefits to the local communities and the Nation. This year marks the 20th anniversary of the O&C Act.

Under an advanced forest management program administered by the Bureau of Land Management the western Oregon forest lands today are an outstanding example of good forest practices and sustained yield harvest of the timber crop. With the cooperation of the logging and timber operators, great strides have been mad to improve cutting practices, logging techniqu and orderly development of the forest potential. A road building program, utilizing both appro- ated funds and money made available by local vernments, and construction activities by the logging industry are providing needed access to the timber. Future construction programs envision a road system that will provide access to all parts of the management areas. In addition to making possible future harvest of the timber crop, the road system will open scenic areas to future recreational use by the public.

The management of the O&C lands has had an important impact upon the economic development on this area of western Oregon. Under a provision of the O&C law, 75 percent of the receipts from timber sales are returned to the O&C Counties. By special arrangement with the Counties, at the present time one-third of their 75 percent share is used to finance the building of access roads and reforestation programs.

Since 1916, when the Oregon and California and Coos Bay Wagon Road Grant lands were revested to the Federal Government, total payments to the O&C Counties have amounted to approximately $84 million.

Today more than 625 million board feet of timber are harvested each year from the O&C lands.

Under the leadership of skilled foresters and management technicians the Bureau of Land Management carries on an intensive forestry program to insure maximum development under the most advanced conservation practices. Programs for reforestation of many thousands of acres, for e protection and insect control, and the application of continually improving utilization standards, all contribute to the future development of the timber resources of western Oregon. **End**

◆

A certain rapidly expanding western mining city wanted some land for a cemetery. When the application for the land became involved in an appeal action, representatives of the city requested speedy action on the appeal because they had "promised their many friends in the community that they would personally see to it that the cemetery was available for them very soon."

◆

Fiscal year 1957 payments by BLM to the 18 counties of western Oregon entitled to share in receipts from timber sold on the Revested Oregon and California Railroad and Coos Bay Wagon Road Grant lands were $9,805,664. Payments ranged from $35,300 to Lincoln County to $2,462,302 for Douglas County. The volume of timber es totaled 628 million board feet.

A SHORT LIST OF PUBLIC LAND TERMS

Acquired lands: lands now in Federal ownership, not a part of the original public domain, having been obtained by purchase, condemnation or gift.

Adjudication: the legal and administrative processing of casework to assure full compliance with the public land laws and regulations; to determine rights.

Application: a formal request for rights in, or eventual title to public lands or their resources.

Cadstral survey or cadastral engineer: a public land survey to establish land boundaries, and subdivisions; or the trained technician who performs such surveys.

Classification, land: designation of public lands as being valuable or suitable for specific purpose.

Control document: any legal document which affects the title to or use of public lands and resources.

Control document index: microphotographic copies of control documents mounted in aperture tabulating cards arranged by state, meridian, and township.

Disposal: a transaction which leads to the transfer of title to public lands from Federal ownership.

Historical index: the narrative part of the new status records which will be a summary of and index to all essential actions or transactions which affect title to or use of public lands and resources.

Legal description: the description and identification of the location of a particular parcel of land according to the official plat of survey.

Ownership plat: the plat of the new status records which is a composite plat (at an approximate scale of thirty chains to one inch) on which is shown survey data necessary to identify and describe public domain lands, and on which is indicated those actions and transactions which currently limit or restrict the use of public lands and resources.

Patent: a document which transfers legal title to public lands.

Plat of survey: a drawing which shows the boundaries, subdivisions, acreage and other features included in a cadastral survey.

Status plat: a copy of the plat of survey on which has been diagrammed and noted such information as is necessary to determine the Federal ownership of public lands and resources.

Tract book: a narrative, journal-like record which is an index to and digest of all essential actions and transactions which affect public lands.

Use plat: the component of the new status records which is a copy of the master title plat which shows, in addition to survey, ownership, and restrictive data, leases, licenses, and permits currently effective.

FOUNDATION OF LAND RECORDS

(Continued from page 5)

on a checkerboard, with the boundary lines running north-south and east-west. The township boundaries tie into the system of land survey coordinates called *principal meridians* and *base lines.*

A *principal meridian* is a line running north and south from an initial point, the latitude and longitude of which is known. There are now 36 principal meridians in the continental United States and Alaska which govern the public land surveys. The last principal meridian established in the United States was created in 1881. The Bureau of Land Management recently established two new principal meridians in Alaska, the Kateel and Umiat.

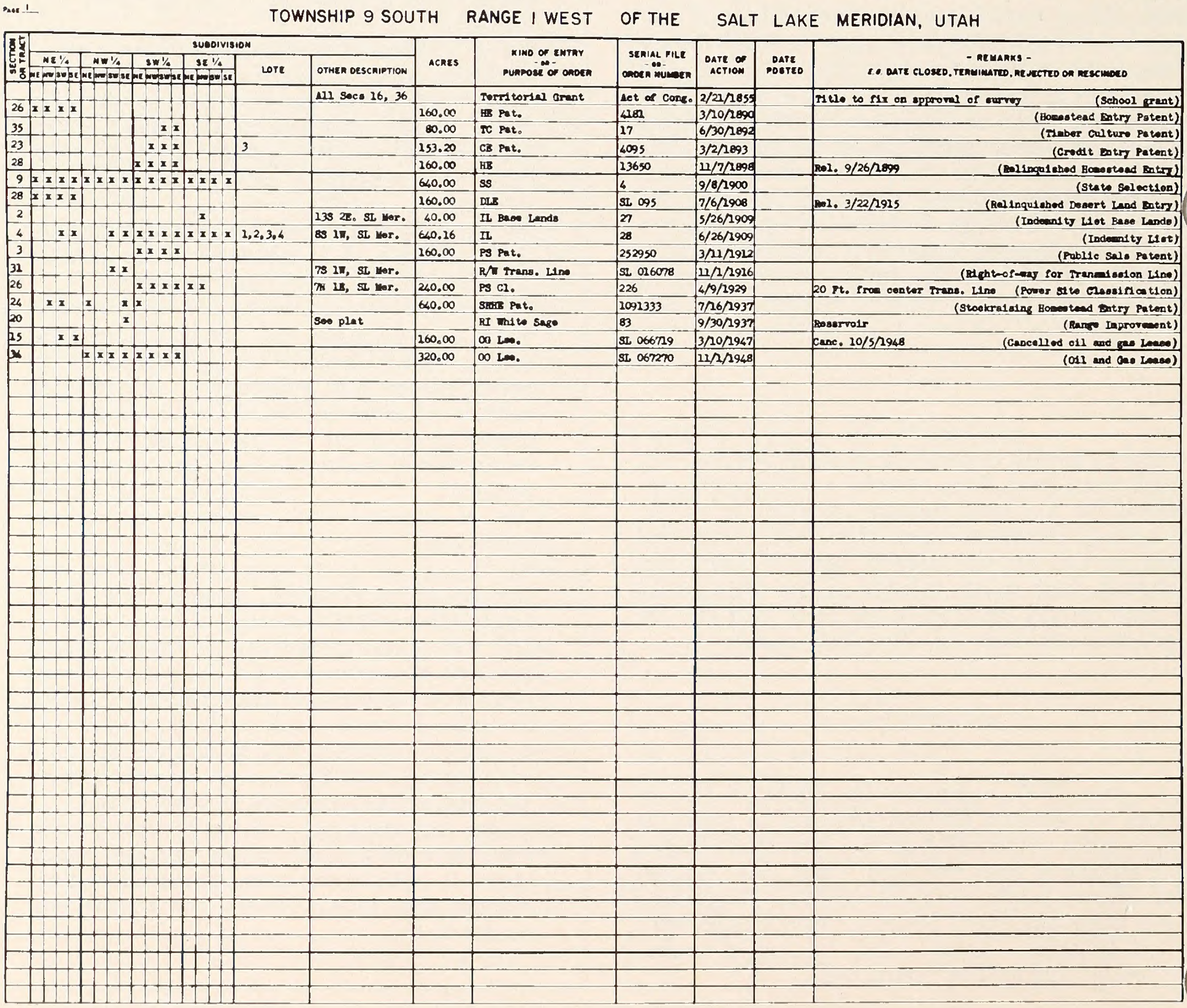
A base line (running east and west) is a line passing through the initial point and perpendicular to the principal meridian. When township surveys are made the principal meridian and the base line serve as the control framework for each individual township.

When using a public land survey map or plat each township may be identified by locating it in terms of its principal meridian and base line. This is done by counting the number of townships north or south from the base line and then counting the number of townships east or west from the principal meridian (called *ranges*). By combining the results of both counts the location (coordinates) of any township can be determined. (See illustration.)

In order to avoid writing out a lengthy description of a township's location, a shorthand method of describing their location has been devised. For example, in the illustration the shaded township is located two townships south of the base line and three townships, or ranges, west of the principal meridian. In short form the location of the shaded township would be written "T. 2 S., R. 3 W." In formal land descriptions it is also necessary to include the name (or abbreviation) of the principal meridian.

The principal subdivision of each township is an area one mile square called a *section*, of which

HISTORICAL INDEX. A chronological journal of land use and ownership actions for each township. (Actual size: 20″ x 25½″.)



Page 1

TOWNSHIP 9 SOUTH RANGE I WEST OF THE SALT LAKE MERIDIAN, UTAH

SECTION OR TRACT	SUBDIVISION																		ACRES	KIND OF ENTRY - OR - PURPOSE OF ORDER	SERIAL FILE - OR - ORDER NUMBER	DATE OF ACTION	DATE POSTED	- REMARKS - E.G. DATE CLOSED, TERMINATED, REJECTED OR RESCINDED
	NE ¼				NW ¼				SW ¼				SE ¼				LOTE	OTHER DESCRIPTION						
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE								
																		All Secs 16, 36		Territorial Grant	Act of Cong.	2/21/1855		Title to fix on approval of survey (School grant)
26	x	x	x	x															160.00	HE Pat.	4181	3/10/1890		(Homestead Entry Patent)
35											x	x							80.00	TC Pat.	17	6/30/1892		(Timber Culture Patent)
23										x	x	x					3		153.20	CE Pat.	4095	3/2/1893		(Credit Entry Patent)
28									x	x	x	x							160.00	HE	13650	11/7/1898		Rel. 9/26/1899 (Relinquished Homestead Entry)
9	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x			640.00	SS	4	9/8/1900		(State Selection)
28	x	x	x	x															160.00	DLE	SL 095	7/6/1908		Rel. 3/22/1915 (Relinquished Desert Land Entry)
2														x				13S 2E. SL Mer.	40.00	IL Base Lands	27	5/26/1909		(Indemnity List Base Lands)
4			x	x			x	x	x	x	x	x	x	x	x	x	1,2,3,4	8S 1W, SL Mer.	640.16	IL	28	6/26/1909		(Indemnity List)
3									x	x	x	x							160.00	PS Pat.	252950	3/11/1912		(Public Sale Patent)
31							x	x										7S 1W, SL Mer.		R/W Trans. Line	SL 016078	11/1/1916		(Right-of-way for Transmission Line)
26									x	x	x	x	x	x				7N 1E, SL Mer.	240.00	PS Cl.	226	4/9/1929		20 Ft. from center Trans. Line (Power Site Classification)
24		x	x		x			x	x										640.00	SRHE Pat.	1091333	7/16/1937		(Stockraising Homestead Entry Patent)
20								x										See plat		RI White Sage	83	9/30/1937		Reservoir (Range Improvement)
15			x	x															160.00	OG Lse.	SL 066719	3/10/1947		Canc. 10/5/1948 (Cancelled oil and gas Lease)
36					x	x	x	x	x	x	x	x							320.00	OG Lse.	SL 067270	11/1/1948		(Oil and Gas Lease)

there are 36, laid out in checkerboard fashion. inning in the northeast corner of the town- each section is numbered from 1 through 36. s a part of the regular public land surveys the boundaries of section lines are laid out on the ground with permanent markers. In order to identify a section of land (containing one square mile, or 640 acres) it is then necessary to give the principal meridian, township, range, and section number. For example, the description of the shaded section in the illustration would be written "Section 14, T. 2 S., R. 3 W," and the name of the principal meridian. Although the name of the state is not required, it is usually added for convenience.

Because it is often necessary to describe an area of less than 640 acres, a system has been devised for further subdivisions of each section. his is done by a process known as *quartering*. Lines marking subdivisions may exist only on a map or, they too, may be actually laid out on the ground. Quarters of the section or simple combinations of quarters are described by compass direction (see illustration). The first quartering would of course, contain 160 acres. Each quarter-section can be further subdivided into quarter-quarters thereby making it possible to describe the location of an area 40 acres in size. These can further be subdivided into areas as small as five acres, and can be described by legal subdivision.

Though the system of public land surveys in- ves a symmetrical pattern of straight lines it not practical to lay out regular geometric squares for large areas on the curved surface of the earth that will also appear perfect squares on the flat surface of a map. Therefore, it is necessary to make adjustments to compensate for the earth's curvature. This means that not all of the land subdivisions have exactly the same area. Variations are kept to a minimum by establishing occasional standard or correction lines or auxiliary meridians.

Under this system of land surveys and descriptions it is possible to accurately locate any quarter division (known as an *aliquot part*) of a ection of land. The non-regular parcels caused by the curvature of the earth, boundaries against large rivers, and surveyed lines of higher priority are called *lots* and are given numbers. One of the principal advantages of this system of land description is that the method allows land to be divided into very small legal subdivisions without an actual detailed field survey by simply drawing lines on a map.

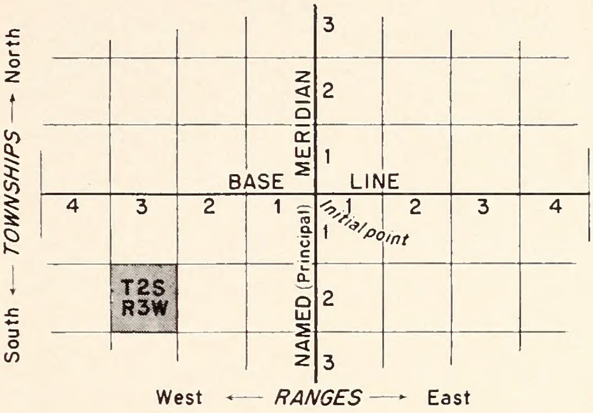
This system of land description is used throughout the United States and Alaska and it is generally necessary for people to describe lands in this manner when dealing with public lands.

Joseph P. Bradley, Associate Justice of the ited States Supreme Court had this to say about

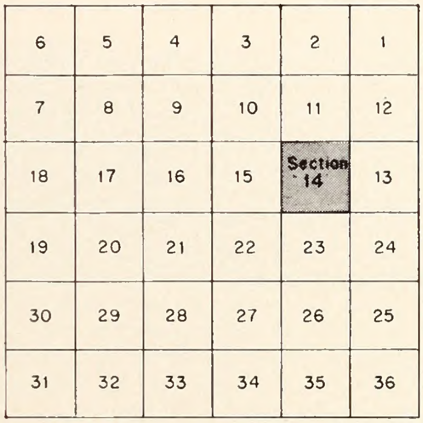
(Continued on page 14)

GENERALIZED DIAGRAMS OF THE RECTANGULAR SYSTEM OF SURVEYS

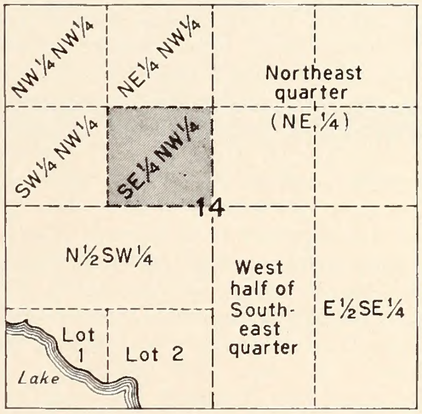
TOWNSHIP GRID



TOWNSHIP 2 SOUTH, RANGE 3 WEST



SECTION 14



= Location and Description of Land Tracts =

Under this survey plan any tract can be located and described from its coordinate position within its principal meridian. For example, if the shaded areas were controlled by the Boise Meridian, the abbreviated description of the smallest subdivision would be the

A.Y. SE¼ NW¼, Sec. 14, T. 2 S., R. 3 W., Boise Mer.

FOUNDATION OF LAND RECORDS

(Continued from page 13)

the Rectangular Survey System in a historical discourse in 1870:

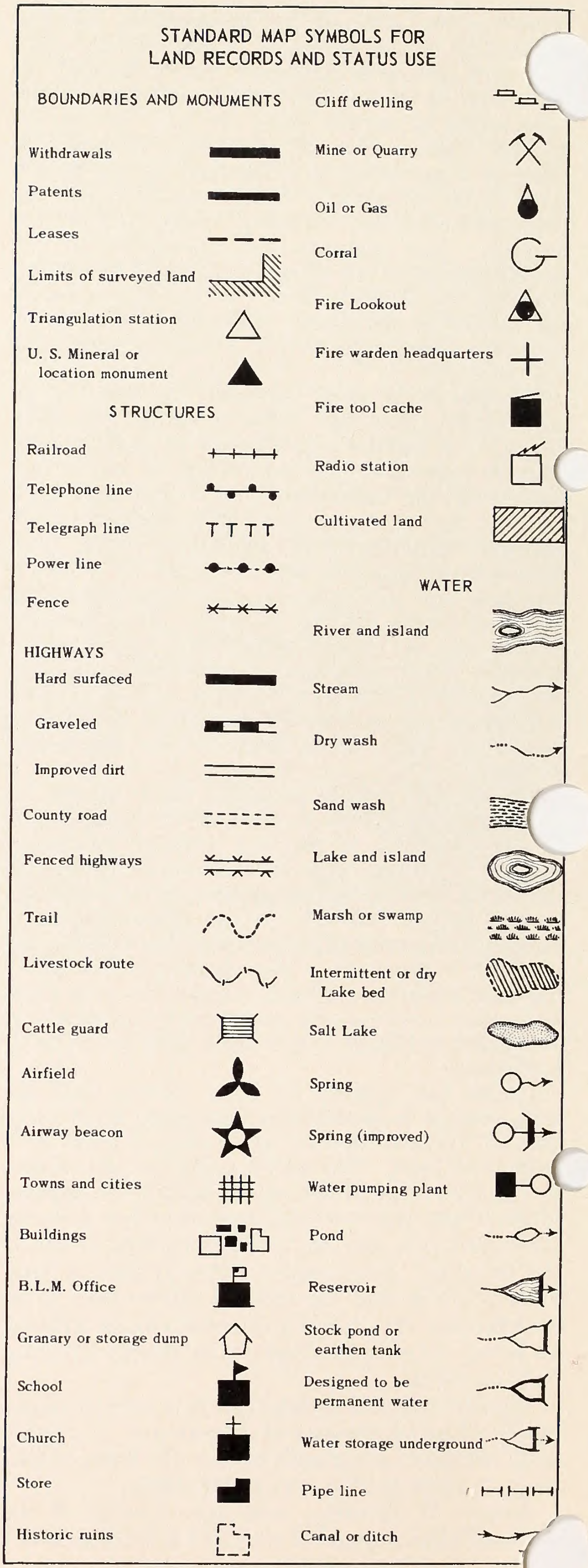
> "The same system was afterwards adopted in the government surveys throughout the extended West and no country in the world has ever exhibited such an orderly and beautiful arrangement of its public land surveys as that of the United States. Principal meridians and parallels are first established at proper distances from each other. From these base lines of operation subordinate meridians and parallels are run in such a manner as to divide up the public territory into checkerboard plots of half a mile square, duly numbered and registered, so that the emigrant, before leaving his home in Germany, may purchase his farm and after crossing the Atlantic, be directed to its location with unerring certainty, and find its exterior boundaries duly located and marked."

For the keeping of records the *survey plat* is unexcelled. The standard township of 6 miles square is represented by a diagram one foot square on which is shown the 36 sections at a scale of two inches to the mile. The plats are of a uniform size, relatively easy to handle, and the system of description is so simple that it can be mastered in a short time.

There are on file with the Bureau of Land Management in Washington about 135,800 public survey plats and 7,000 large bound volumes of field notes. These figures do not include the public land surveys in the States of Ohio, Illinois and Indiana which have been transferred to the National Archives. All these survey records are accessible to the public. Any plot of land on these plats can be described by less than a line of type and the description can refer to only one plot of the millions of possible arrangements or locations. The pin-point location of every tract, so described, can also be found on a large map in a few moments whether it be in Florida or Oregon.

There seems little doubt that had the Nation adopted the random survey methods of the Seventeenth and Eighteenth Centuries, development and settlement of the public lands would have been materially impaired. The random surveys are typified by irregular and unequal size tracts; descriptions are long and difficult to understand; coordination of surveys for mapping are difficult; and on a nationwide basis such a system would have entailed prohibitive costs. The problems inherent in such surveys have been clearly demonstrated by the experience of several eastern states that are, even today, using the same fundamental basis for land surveys as the early Colonists.

The task of completing the survey of the public lands of the United States is a job that will take many years. As new and increasing demands are made upon the Nation's land and resources new surveys will be necessary prior to development. As in the past, the public land surveys and the records which they create will contribute to the future development of the Nation's land and resource base. **End**



FROM OLD RECORDS TO NEW

ntinued from page 7)

The title and use plats are drawn at a scale of 30 chains to the inch. (A *chain* is 66 feet, or 80 chains to the mile.) At this scale areas as small as 40 acres may be plotted and annotated with perfect legibility. In areas of unusual activity such as the California small tract activity, supplemental plats at a scale of 10 chains to the inch will be used to accommodate notations on smaller areas.

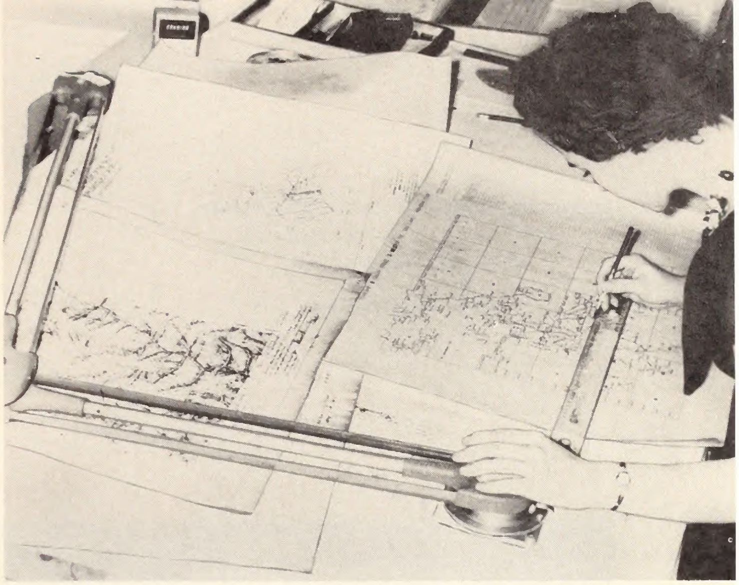
The title and use plat entries and annotations are made mechanically or by stencil lettering methods. All postings to the historical index are typewritten to provide the best legibility. A chart of map symbols for bureauwide use has also been designed. A great many of the symbols are commonly used, and others are peculiar to these records. A standard list of word abbreviations has been adopted and will be used throughout our offices. The new documents measure 20 inches by 25½ inches.

In September 1956 a contract was awarded for reconstructing the records of the State of Utah. Work began immediately. The contractor was supplied with the Control Document Index, consisting of some 105,000 cards and a variety of other record documents.

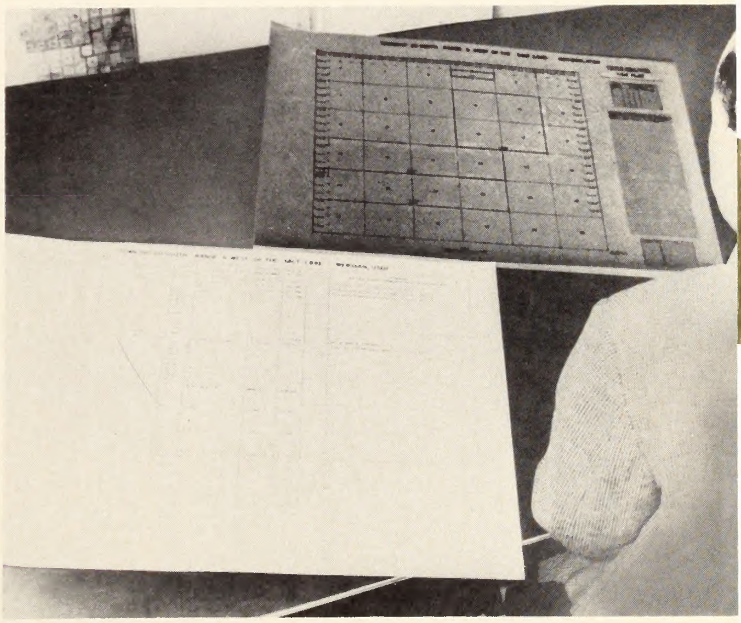
The contractor microfilmed the tract books and ages of the serial register to insure a complete cord. The Bureau furnished information on urrent transactions periodically.

The contractor's first task was to draw township diagrams from the plats of survey. It was found that 55 percent of the surveys of the 2,550 townships in Utah conform to the standard township diagram. There are approximately 14,000 mineral patents effective in Utah, the great majority of which do not contain a township and range description but are locatable only by metes and bounds description tied to an established mineral monument. The metes and bounds description of the certificates were combined with the location of the mineral monuments and plotted to the rectangular survey description. Thus, the new land records will show the location of the mineral patents in Utah by township and range for the first time.

There have been many procedural problems, ranging from difficulties in translating old penmanship to finding of undated actions. In many cases it was necessary to refer to original record documents and even to the original field notes of surveys—all to insure the accuracy of the new records.



STEADY NERVES. Skilled technicians transcribe data from the old maps to the new master title plat.



FINISHED PRODUCT. Searching the new records will save the time, money, and patience of many people.

The final installation and operation of the new system will save many thousands of dollars to the Government and all the records users and provide the means for improved services to the public.

End

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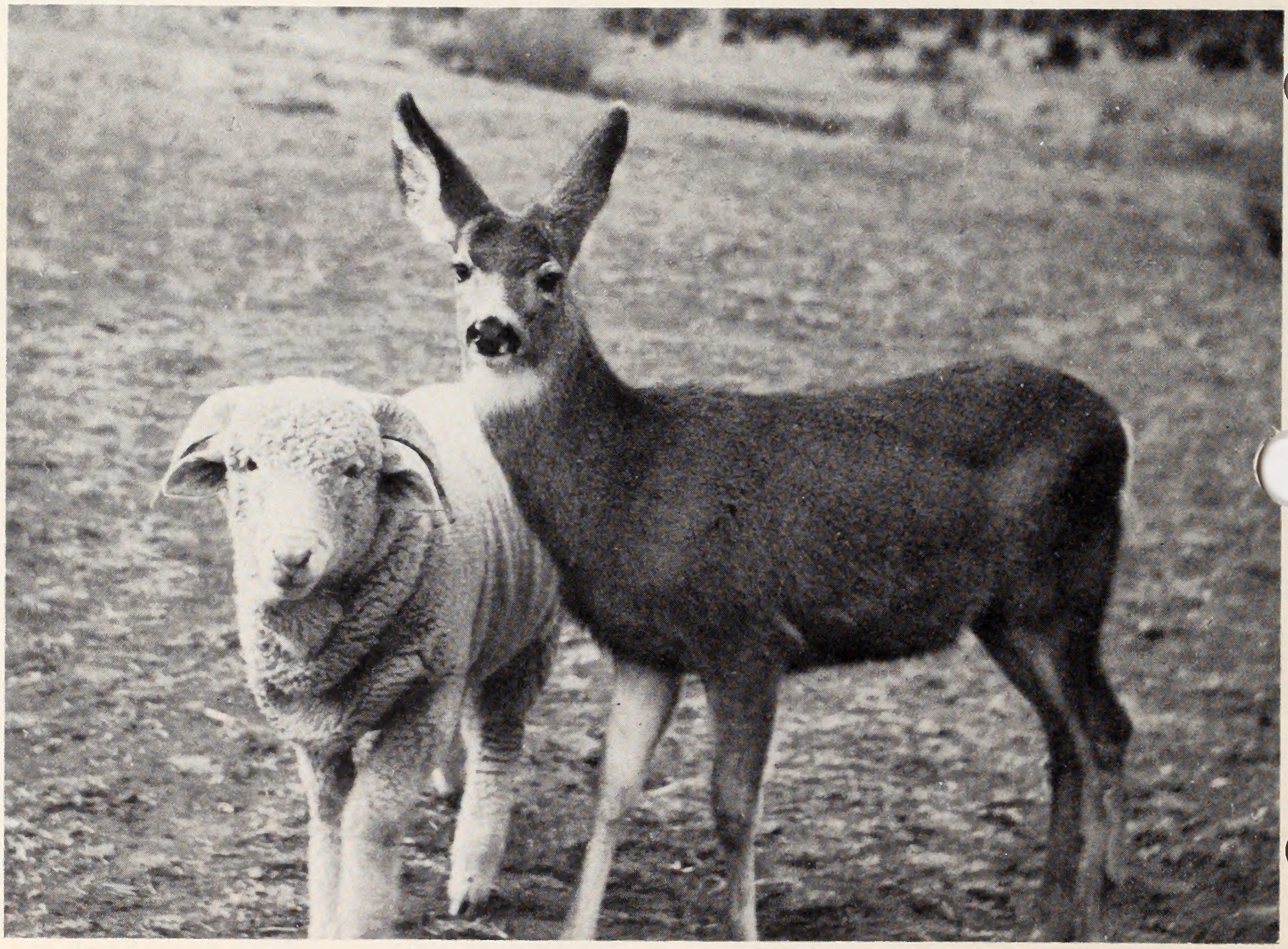

REAL-LIFE MULTIPLE USE. Lamb and fawn who shared same ranch in constant friendship deny the sometime allegation that dual wildlife and domestic livestock use of the range is incompatible. Photograph was taken by BLM Range Manager Jesse L. Kirk on the Bob Steward Ranch, Ely Grazing District, Lincoln County, Nevada.